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INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

RIAD, AMINE

ART UNIT	PAPER NUMBER
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2113

MAIL DATE	DELIVERY MODE
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10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/806,261	Applicant(s) PRIDY, KENNETH	
	Examiner Amine Riad	Art Unit 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/8/07.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Detailed Action

Claims 1-14 have been presented for examination.

Claims 1-14 have been rejected.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelkar U.S. Patent 7,058,846.

In regard to claims 1 and 7

Kelkar discloses a computer cluster comprising:

storage media; (Figure 1; item 140)

a first computer having a first instance of an application program installed, said

application program having instructions, (Figure 2; item 110A)

said first computer including,

volatile memory; (Figure 7; item 717)

processing means (Figure 7; item 714)

for executing instructions of said first instance of said application program so as to modify data stored in said volatile memory (Column 5; lines 8-9)

for creating a snapshot of said data while said first instance of said application program is running, said snapshot being stored in said volatile memory, (Column 3; lines 40-44)

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and for while said first instance of said application continues to modify said data so that it diverges from said snashot transferring said snapshot from said volatile memory to said storage media, and (Column 3; lines 40-40 "services that allow configuration changes to be made dynamically to storage resources")

a second computer having a second instance of said application program installed, (Figure 2; item 110b) said second computer including means for accessing said storage media so that said second instance of said application can access said snapshot as stored on said storage media (Figure 2 ; item 110b).

In regard to claim 2

A computer cluster as recited in Claim 1 wherein said processing means includes a data processor (Figure 7; item 714)

for executing instructions of said first instance of said application program so as to modify data stored in said memory, and (Column 3; lines 36-37 "a clustering environment in which storage configuration changes can be made dynamically" [dynamic change entails modified stored data])

for creating said snapshot of said data while said application program is running,(Column 3; line 43) said snapshot being stored in said volatile memory (Figure 1; item 140d), and a transfer processor for transferring said snapshot from said volatile memory to said storage media while said first instance of said first instance of said application program is running. (Figure 1; 102 a)

In regard to claim 3,

Kelkar discloses a computer cluster, as recited in Claim 1 further comprising a first

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cluster daemon running on said first computer for causing said snapshot to be created. (Column 3; lines 39-40 "These operations include storage management services that allow configuration changes to be made dynamically" [Examiner considers management services as a daemon])

In regard to claim 4

Kelkar discloses a computer cluster as recited in Claim 1 further comprising a second cluster daemon running on said second computer, said second cluster daemon providing:

for detecting a failure that prevents said first instance of said application program from running on said first computer (Column 5; lines 26-28), and for causing, in response to said detecting a failure, said second computer to process said snapshot in accordance with instructions of said second instance of said application program. (Abstract; "If a node that has made a resource configuration fails, the resource configuration change is available for use by other nodes in the set, each of which can resume operations of the failed node")

In regard to claim 5

Kelkar discloses a computer cluster as recited in Claim 1 wherein said processing means provides for, in response to a write access of a section of said volatile memory in accordance with instructions of said first instance of said application program, copying data in that section so that one instance of said data originally in that section is modified and the other copy of data originally in that section is not modified. (Column 3; line 41 [Kelkar discloses changes are made dynamically to storage resources this that while the

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write process is made to the memory by the processor only the new data involved in the transaction is made available to the storage because it is dynamic])

In regard to claims 6 and 12

Kelkar discloses a computer cluster as recited in Claim 2 wherein said data processing means maintains state data, said snapshot data including at least some of said state data. (Column 3; line 44)

In regard to claim 8

Kelkar discloses a method as recited in Claim 7 further comprising executing a second instance of said application program on a second computer of said computer cluster using said snapshot as a starting state. (Abstract; "If a node that has made a resource configuration fails, the resource configuration change is available for use by other nodes in the set, each of which can resume operations of the failed node")

In regard to claim 9

Kelkar discloses a method as recited in Claim 8 further comprising detecting a failure that prevents execution of said first instance of said application program, said detecting occurring after said transferring and before said executing a second instance. (Column 5; lines 26-28)

In regard to claim 10

Kelkar discloses a method as recited in Claim 8 wherein said executing a second instance follows said transferring without an intervening detection of a failure. (Column 4; lines 53-56 "To make resources configuration available to another node that can

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resume operation of node 110a **upon failure**, the invention synchronizes resources configuration data")

In regard to claim 11

Kelkar discloses a method as recited in Claim 7 wherein said transferring is effected by a data transfer processor not used in executing said first instance of said application.

(Figure 3; items 330a and 330b)

Response to Applicant's argument

Applicant arguments filed on September 08, 2007 have been fully considered, and are not persuasive.

In regard the argument, which states, "While this passage mentions a "snapshot", it does not teach that the snapshot is stored in item 717 of Kelkar Fig. 7. The Final Action does not establish that Kelkar's snapshot is stored in Kelkar's volatile memory"

Examiner respectfully disagrees. Examiner points Applicant to (Column 9) "a system memory 717 (typically RAM, but which may also include ROM, flash RAM, or the like)" The above disclosure proves that memory 717 is indeed volatile memory. Argument is not valid.

In regard the argument, which states, "Claim 1 requires "a snapshot of said data", "said data" referring to data stored in volatile memory. Claim 1 thus requires that the data that is the subject of the stored in volatile memory. The Final Action does not establish that this storage area is or is stored in item 717 of Kelkar Fig.7 "

Examiner respectfully disagrees. Column 10 of Kelkar states, "The RAM is generally the main memory into which the operating system and application programs are loaded and typically affords at least 66 megabytes of memory space " Examiner points out, the application loaded into memory 717 is replicated on the flow in item 140 which is storage media. Argument is not valid.

In regard the argument, which states, "Claim 1 requires that the snapshot be transferred from volatile memory to "said storage media " The Final Action identifies item 140 of Kelkar Fig.1 as the claimed "storage media". The forgoing "snapshot" quote does not establish that Kelkar's snapshot is transferred to item 140. Thus, the final Action does not establish that Kelkar meets claim 1 limitation of snapshot being transferred to storage media." Examiner respectfully disagrees.

Examiner submits that U.S. Patent 7,058,846 explicitly solves the failure problem when storage 140 {considered said storage media} is integrated within node 110A. Kelkar discloses, "One problem with system 100 described above is that storage resource definition 140D is stored on node 110A fails, storage resource 140 cannot be used because storage definition 140D is not accessible to other nodes. To make resource configuration available to another node that can resume operation of node 110A upon failure, the invention synchronizes resource configuration data on multiple nodes in a clustering environment" Argument is not valid.

In regard the argument, which states, "Final Action does not establish that Kelkar teaches the Claim 1 limitation of data diverging from snapshot as the snapshot is transferred." Examiner respectfully disagrees. Examiner points Applicant to (Column 3) "The present invention provides a method, system, and computer program product to make resource configuration information available to nodes in a cluster in as close to real-time as possible with minimal overhead."

Making the resource available to nodes in a cluster is diverging the resources from the snapshot. Argument is not valid.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amine Riad whose telephone number is 571-272-8185. The examiner can normally be reached on 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on 571-272-3645. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AR

Amine Riad

Patent Examiner

10/9/07


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